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ABSTRACT

As student bodies become more diverse and student needs multiply, institutions may find recruitment and retention increasingly challenging tasks. Effective enrollment management can introduce some stability and predictability into the planning context, with the promise of increased efficiency and effectiveness in meeting both student and institutional goals. Successful enrollment management depends on an information base that is comprehensive, targeted, and continuously updated, to inform enrollment management policies, and to monitor their effectiveness. Adopted in its entirety, this approach: (1) establishes a framework for studying student college interaction; (2) encourages development of enrollment targets, performance monitoring systems, and longitudinal tracking; (3) identifies areas of student behavior where institutional understanding is weak; (4) integrates research into enrollment management policy; and (5) promotes continuous improvement using the data, analysis, and policy (DAP) cycle. To illustrate the application of the DAP cycle, this paper describes three examples of enrollment management policy analysis and revisions. The first example, involving the use of institutional financial aid in a selective admissions environment, is a classic enrollment management problem at liberal arts colleges. The other examples illustrate the wide applicability of the framework focusing on minority student retention and continuing education recruitment at a large, open-admission community college. (KP)

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Take Charge of Your Enrollment: Improving Enrollment Management through Policy Analysis

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Take Charge of Your Enrollment: Improving Enrollment Management through Policy Analysis

Craig A. Clagett and Helen S. Kerr

Introduction

Academic planning, budget planning, facilities planning--all require assumptions about student enrollment. To whatever extent an institution can manage its enrollment, thus making it more predictable, the efficacy of planning improves. A college or university that can enroll and retain a student body of desired size and composition in all likelihood will enhance its effectiveness. Increasing demographic and economic diversity among current and prospective students elevates both the importance of and the challenge to enrollment management. Institutions with effective enrollment management teams and strategies can "take charge of change" by ensuring a better fit between the students they enroll and their campus mission and culture, increasing both student and institutional success.

Enrollment management can be defined as a coordinated effort to influence the size and characteristics of an institution's student body, through marketing, recruitment, admissions, pricing, financial aid, advising, and other policy choices. An active enrollment management program, with specific targets and well-grounded strategies to achieve them, will be fully integrated into an institution's planning process. This is in contrast to more passive planning that relies on mathematical projection techniques for forecasting rather than managing enrollment.

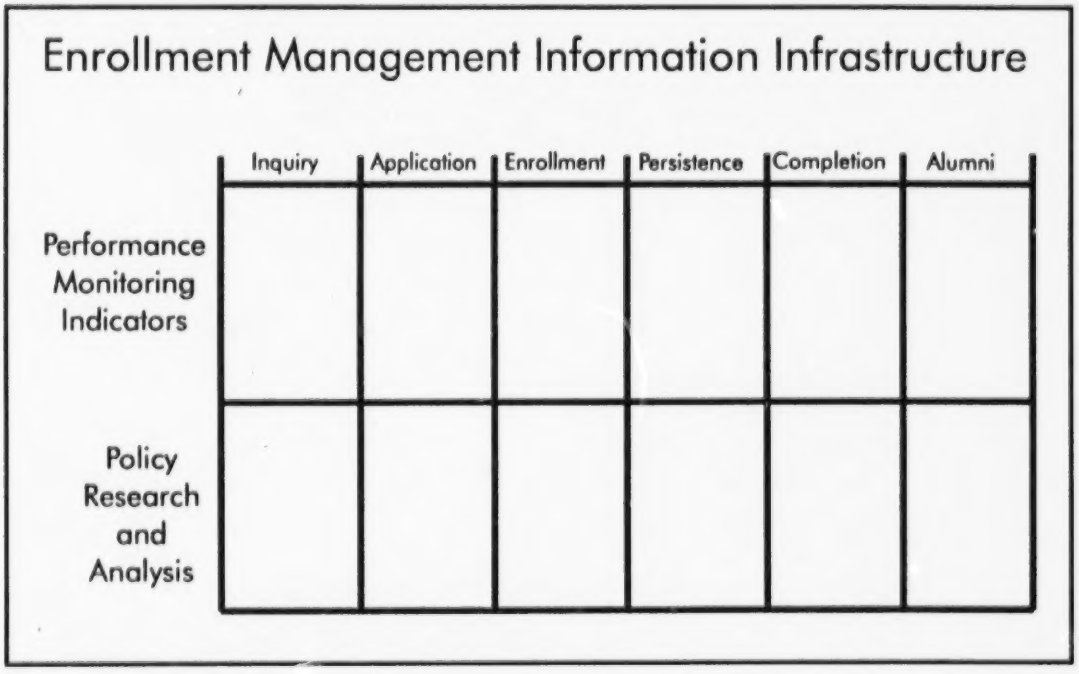
Some are skeptical of an institution's ability to influence its enrollment in any substantial way. Constrained by mission, resources, geography, competitive position, and tradition, some see their institution as largely unable to attract and retain the number and type of students they might desire. Instead, they perceive their campus as having an established market largely impervious to marketing or other strategies. In contrast to such skeptics, we believe it is possible to influence enrollment in desired ways through the appropriate policy choices. But an essential ingredient is timely, focused information. As Claffey and Hossler (1986, p. 106) have argued,

> Planning and evaluation are at the heart of an enrollment management system, but the single most critical element in all of this effort is accurate, timely, usable information. Thus, our ability to influence our enrollments to any degree is a direct function of the information...available.

The balance of this paper presents a conceptual framework for organizing the information necessary to support a successful enrollment management program. First, establishment of an initial information infrastructure is described. Then a continuous monitoring, evaluation, and improvement cycle is proposed. Three examples of the model as applied at a selective liberal arts college and a comprehensive community college are described. The paper concludes with a summary of the approach and its benefits.

Establishing the Information Infrastructure

Successful enrollment management depends on an adequate information base. Two types of information are needed: performance monitoring indicators and in-depth policy research and analysis. Both types are needed for all six stages of a student's involvement with an institution: from initial inquiry through application, enrollment, persistence, completion, and alumni activities (see matrix, below). Establishing the initial information infrastructure to support enrollment management requires five steps (Clagett and Kerr, 1993b): (1) review the literature on college choice, student-institution fit, and student retention; (2) construct longitudinal cohort tracking files; (3) develop a performance monitoring indicator system; (4) identify patterns in aggregate student behavior; and (5) conduct survey and focus group research to better understand student decisionmaking. Two examples from the literature provide especially informative discussions concerning the establishment of an information base for enrollment management. Glover (1986) describes several analytical projects that undergird an enrollment management decision-support system; Davis-Van Atta and Carrier (1986) stress that the information needed at each stage can be best analyzed in terms of understanding student decision processes.



Upon conclusion of the five-step process, an institution will be in a position to launch an enrollment management program grounded in relevant local information and with established benchmarks for monitoring its effectiveness. A full discussion of the implementation of the initial enrollment management information infrastructure can be found in the two 1993 Clagett and Kerr articles referenced in the bibliography. Two key components, tracking systems and performance indicators, will be briefly discussed in the following sections.

Longitudinal Student Tracking System

Since enrollment management encompasses student experiences with an institution from inquiry to post-graduation, data systems paralleling this student flow are most useful. In place of discrete files established for other purposes, most institutions will benefit from construction of separate longitudinal cohort tracking files (Ewell, Parker, and Jones, 1988). Free-standing tracking files for selected entering cohorts of students preserve key data values and facilitate data analysis. The data elements comprising these files will include student attributes at entry (typically collected as part of the application process), student progress variables updated each term (for example, credits attempted and earned), and follow-up indicators such as employment and subsequent education (transfer or graduate school attendance). It is usually sufficient to track cohorts entering every third fall, though if major changes in policy or mission are occurring an institution might want to track successive cohorts. Summer or spring entering cohorts warrant tracking only if substantial in number and notably different in characteristics from fall students (Clagett, 1992).

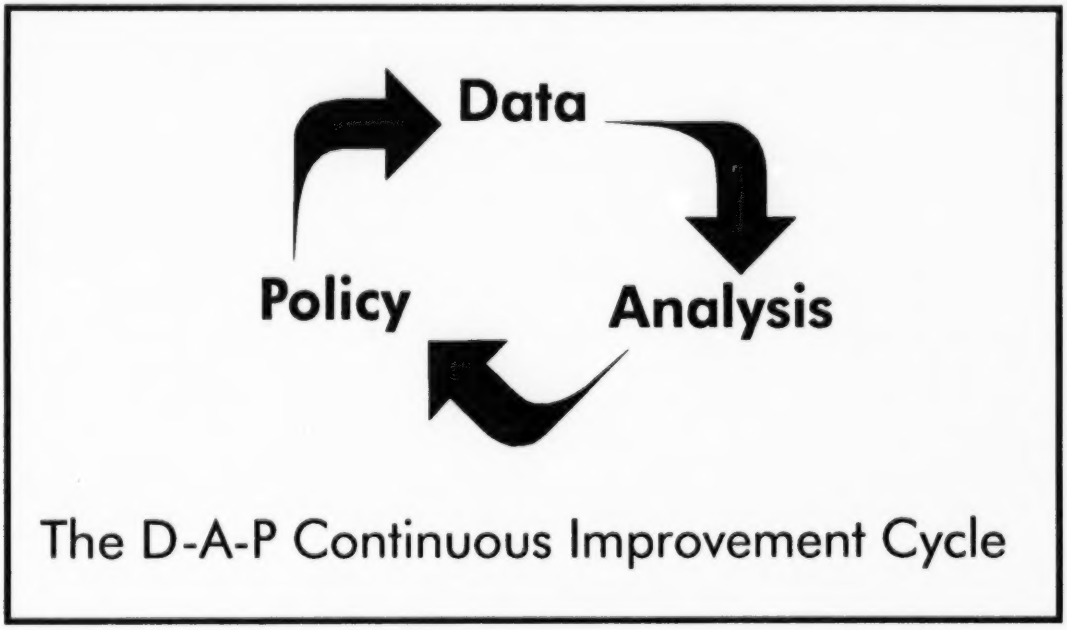
Performance Monitoring Indicators

Performance monitoring indicators, or PMIs, are needed for each stage of student contact with the institution. Developed by consultation and negotiation among all offices with enrollment management responsibilities, the PMIs serve both planning and evaluation roles. Typically simple counts or ratios that describe student status at a particular point in time, the indicators are used by the enrollment manager to evaluate the performance of each unit as well as to oversee the broader institutional enrollment picture. Such sets of critical success factors or key success indices (Sapp, 1994) are essential for the continuous improvement of enrollment strategies. Dolence, et al. (1987-88) and Clagett (1992) provide lists of suggested indicators for each stage of recruitment, retention, and post-enrollment involvement with an institution. Typical examples for recruitment would be the number of applications received, number of acceptances, and enrollment yield. For retention, persistence rates to the sophomore, junior, and senior year, and graduation rates for various student subgroups would be included. Post-graduate PMIs might include alumni giving as well as employment and advanced degree attainment.

In addition to identifying the indicators, benchmarks or targets should be established for each. These may simply be last year's figures, or forecasts based on formal modeling or professional judgment. They may be targets based on peer institutions or system averages. Or they may be explicit goals, reflecting the vision and aspirations of the institution. Whatever their genesis, the benchmarks or targets are the standards against which actual indicator values are judged.

The D-A-P Cycle for Continuous Improvement

Once an established information infrastructure is in place and initial policies implemented, the focus shifts to monitoring, evaluating, and improving enrollment management policies. The performance of the enrollment management plan is routinely monitored through the systematic updating of the PMIs explicitly developed for this purpose. The PMIs constitute the primary *data* used for keeping track of the success of existing policies. They are supplemented by insights derived from formal environmental scanning processes, and from informal feedback from students, faculty, staff, and others. These data will indicate where the enrollment reality is diverging from that desired, prompting in-depth *analysis*. The analysis stage is critical; this is where a fuller understanding of what is really going on is gained. Analysis will reveal if the situation described by the PMIs is acceptable or problematical. It is at the analysis stage that potential improvements are often identified, which may result in suggested *policy* revisions. The results of changed policies will be monitored in subsequent PMI reviews, in a continuous *data-analysis-policy* or *D-A-P cycle*.



The D-A-P Continuous Improvement Cycle

Continuous Improvement: Three Examples

To illustrate application of the D-A-P cycle, three examples of enrollment management policy analysis and revision are described in this section. (Four different examples can be found in Clagett and Kerr, 1993a.) The first example, involving the use of institutional financial aid in a selective admissions environment, is a "classic" enrollment management problem at liberal arts colleges. The following two examples illustrate the wide applicability of the framework, focussing on minority student retention and continuing education recruitment at a large, open-admissions community college.

Financial Aid Impact on Yield and Revenue

Balancing the enrollment, tuition, and financial aid goals of an institution continues to be a concern for presidents (Johnson and Meyerson, 1993) and a substantial challenge to enrollment management. For a small liberal arts college, with an enrollment of less than 900 students, achieving the delicate balance between these sometimes conflicting goals became critical. The interrelationship between student enrollments, financial aid, and tuition revenues was not fully appreciated until the institution started experiencing unfavorable admissions statistics and an over-expenditure on financial aid. Once this interrelationship was recognized by looking at net tuition revenue (NTR) and net tuition revenue per student, the job of balancing these factors to meet institutional goals began.

For purposes of this analysis, net tuition revenue is defined as the tuition revenues from undergraduate students less institutionally-funded financial aid. This definition of net tuition revenue recognizes institutionally-funded financial aid as a discount on the stated tuition price and does not consider auxiliary budgets since they are stand-alone operations providing needed services to the student body (Hubbell, 1991).

Data. Admissions trends at the college are tracked throughout the freshman admissions process and reported in final form during the fall. Freshmen and transfer student acceptance and enrollment rates are maintained by gender and race, and more recently, by financial aid awards. In addition to monitoring admissions data, the college recently began closely monitoring financial aid expenditures and the impact of these expenditures on the net tuition revenue for the institution. From 1984 through 1991, the acceptance rate of freshmen was continually increasing while the enrollment yield was declining. In 1992, the college went substantially over budget in financial aid; this action had a positive impact on yield but a negative impact on revenue. As a result, the college tried to correct the problem by packaging student aid with more loans and by scaling back on institutional financial aid, even before reaching enrollment goals. After several unsuccessful attempts at achieving a balance

between enrollment, financial aid, and tuition revenues, management came to the conclusion that they needed to develop a better approach which would enable the office of enrollment management to achieve both the enrollment and net tuition revenue goals of the institution.

Analysis. In 1990, St. John concluded from research findings that "discount pricing could be expected to keep enrollments higher than projected, if in fact students were more responsive to changes in grant aid than to changes in tuition (St. John, 1990)." This conclusion and the long standing belief of admissions and financial aid officers that aid offers virtually determine students inter-college choices, further supported the college's need to find an effective way to allocate institutional grants and scholarships.

Before formulating a policy with regard to financial aid, the college first had to understand the current profile of entering freshmen. Since the focus of discussions leading up to the analysis centered on net tuition revenue, the analysis was initiated by developing a distribution of freshmen within a range of net tuition revenues (see exhibit below). In addition to net tuition revenues, yield by NTR range was considered as well as two academic indicators: SAT scores and high school grade point average (GPA). The analysis revealed that the highest yield occurred at the lowest NTR levels and the lowest yield occurred at the highest NTR levels. In addition, the students with the lower academic qualifications were at the higher NTR levels. Not surprisingly, the full pay students had the lowest yield and the lowest academic qualifications in the distribution.

Distribution of 1993 Freshmen by Net Tuition

NTR Range	Students	Yield	SAT	GPA	Revenue
0 - 1,999	16	55%	1199	3.72	$5,248
2,000 - 3,999	20	51%	1143	3.62	67,083
4,000 - 5,999	32	39%	995	3.23	167,885
6,000 - 7,999	48	34%	1021	3.56	337,909
8,000 - 9,999	16	24%	1046	3.28	146,495
10,000 - 11,999	7	18%	911	3.10	73,512
12,000 - 13,952	5	23%	980	2.93	64,354
Full pays	70	13%	919	2.49	976,640
Total	214	23%	1005	3.12	$1,839,126

Once the current profile of freshmen was established, a forecasting model was developed to determine where the college needed to be in order to meet its enrollment and net tuition revenue goals (see forecasting model exhibit). Since "responsiveness to changes in tuition charges and aid amounts are most likely to have an impact in the final stage of the college-choice process" (St. John, 1990), the conclusion was that the college choice decision could be influenced if the college determined an effective method of allocating grants and scholarships (Chapman, 1979). Since one of the goals of enrollment management was to meet a NTR goal, the focus of the analysis was on the highest three ranges of the model. In addition, since aid increases the likelihood that an applicant will enroll (Jackson, 1988; St. John and Noell, 1989) and since applicants are more responsive to changes in grant awards (Blakemore and Low, 1983; St. John, 1990), increasing institutional grant awards seemed to be the most effective way to increase yield and, therefore, enrollment.

Net Tuition Revenue Forecasting Model

NTR Range	Average Award	Yield	Offers	Enrolled	Revenue
0 - 1,999	$14,624	55%	29	16	$10,415
2,000 - 3,999	11,598	51%	39	20	73,178
4,000 - 5,999	9,706	39%	82	32	178,174
6,000 - 7,999	8,237	36%	142	51	359,885
8,000 - 9,999	6,200	34%	67	23	206,774
10,000 - 11,999	4,796	28%	38	11	111,518
12,000 - 15,277	2,300	33%	100	33	428,241
Full pays	0	13%	460	60	913,565
Total				245	$2,281,750

In order to maintain yield at the four lowest NTR ranges, awards for students at these levels were increased by slightly less than the overall tuition increase. Average awards at the higher NTR levels were increased by more than the overall

tuition increase and, in some cases, the awards were increased by substantially more than the awards made in the previous year. The increases in these average awards were expected to impact yield by at least 10 percent, bringing yield at the higher net tuition revenue levels up to approximately 33 percent. Yield for the full pay students was expected to remain the same; however, grant awards would be offered to some of these students thereby increasing yield in the $12,000-15,277 NTR range. These increases in average institutional grant awards to students and the subsequent increase in enrollment yield were expected to enable the college to meet the enrollment and net tuition revenue targets needed in order to balance the budget.

Policy. Increasing average grant awards required that the college adopt a policy or policies that directed institutional financial aid funds toward the desired goals. As a result, two grant award programs were instituted. The Achievement Award Program was an award program based on academic credentials, and the Institutional Room Grant Award was an award program that essentially replaced financial aid otherwise received in the form of loans.

The average Achievement Award would be approximately $4,600; the awards would range from $3,500 to $6,000. These awards would be offered to approximately 200 applicants with a predicted freshmen GPA of between 2.5 and 3.0, and participation in at least two extra-curricular activities. The modest academic criteria were consistent with the findings of Trusheim and Gana (1994) that "enrollment probabilities are improved more for merit award recipients at less competitive SAT ranges." The goal was to enroll about one-third (70) of these students.

The second award program instituted was the Institutional Room Grant Award Program. Room charges were approximately $2,300; consequently, this amount was determined to be the amount of the Room Grant Awards. Approximately 230 freshmen would be offered this award and about 100 were expected to enroll with these awards. Miller found that "loans offered instead of grants repel admitted applicants" (Miller, 1981); therefore, this program was expected to have a higher yield rate since these students would not typically be eligible for other types of grant award programs.

With these two new institutional grant award programs in place, the college hoped to achieve its enrollment and net tuition revenue goals in order to help return the institution to financial stability. This analysis also enabled management to have a clearer understanding of the complex relationship between enrollment, tuition, and financial aid.

Minority Student Retention

Prince George's Community College, a large, comprehensive, open-admissions two-year college in the Maryland suburbs of Washington, D.C., has experienced a rapid change in the racial composition of its student body. Like the county it serves, its student population has gone from less than 15 percent minority in 1970 to two-thirds minority presently. African-Americans accounted for nine out of ten minority students at the college. The college's faculty and staff, due to low turnover and funding constraints on new hires, had changed much more slowly. Minorities currently constitute 35 percent of the full-time staff, and 20 percent of the full-time teaching faculty.

Data. Most performance monitoring indicators for student achievement at the community college include breakouts by racial/ethnic category. These consistently revealed African-American performance significantly below that of white students. For example, African-American graduation and transfer rates had been less than half those of whites, and the percentage of African-Americans earning passing course grades each term had been six to ten percentage points below that of white students. Placement testing in English, reading, and mathematics revealed that four out of five African-American students entering the college each fall needed remediation in at least one area. Dissemination of these PMIs focussed the administration's concerns about minority student performance at the college. In addition, the Maryland Higher Education Commission had identified minority achievement as a statewide priority, and annually requires all public colleges to submit *Minority Achievement Reports* analyzing a number of minority student progress variables.

Analysis. Several analyses were undertaken to learn more about African-American student progress. An initial study employed the college's custom lifestyle cluster, geo-demographic analysis system *PG-TRAK*. Similar to national cluster systems employed in corporate America, PG-TRAK identifies a set of neighborhood types or clusters based on statistical analysis of Census and other data at the tract level. By developing a custom system internally, the college avoided large licensing fees and created a typology based solely on the local data, with an emphasis on variables especially pertinent to educational planning. The clusters or neighborhood types vary in socio-economic status, ethnic composition, type of housing, family life cycle, and other ways. Residents of these neighborhoods have different lifestyles, aspirations, and educational needs. By geo-coding student address lists--identifying which tract and thus in which cluster each student resides--the college gained a powerful new variable for interpreting student performance. For example, student outcomes, in terms of graduation and transfer rates, were analyzed by cluster. The three largest primarily African-American clusters had substantially different outcome patterns. The upscale "Enterprise" cluster, had below average graduation rates but transfer rates a third higher than the college average. The predominantly blue collar African-American cluster had graduation and transfer rates near the college average. The relatively poor

"Downtown PG" cluster had graduation and transfer rates considerably below average. The analysis confirmed the heterogeneity of the African-American student body, and suggested that performance was related to socio-economic factors.

Next, the research office initiated a series of longitudinal studies based on cohort tracking files. Given the large proportion of African-American students needing remediation, a major focus was on student enrollment and completion in developmental courses. A study of Fall 1990 entrants identified as needing remediation found that three in ten had not enrolled in an appropriate developmental course as of the end of the Spring 1992 semester. Avoidance of remediation was most prevalent among students needing developmental reading. Only 61 percent of the 872 students needing remediation had taken developmental reading within two years of entering the college. Just over half of those, or only a third of the total identified as needing remediation at entry, had successfully completed remediation in reading. Only nine percent of the 933 students identified as needing developmental math at entry had completed remediation and were eligible for a credit math class within two years. A fourth of those identified as needing math remediation had test scores indicating initial placement in a basic arithmetic course.

Following national literature that suggested that social integration was a key factor in persistence in college, the research office designed and conducted a comprehensive campus racial climate study. Detailed written surveys of faculty, staff and students were supplemented by several focus groups. The major findings presented a mixed picture. When asked to rate campus race relations overall, nine in ten in each group gave positive ratings. Overwhelmingly, respondents said that people got along, that diversity was a college strength, and that the institution was committed to fairness. Opinion was split, however, over two major issues: affirmative action in employment, and multicultural education initiatives. African-American respondents were much more likely to support both than white respondents. Of particular interest, given the institution's evolution into a campus with a majority white faculty teaching a majority African-American student body, was how each group in this relationship perceived the nature of their relationship. The survey found seven in ten white faculty saying their relations with minority students were good. Only four in ten minority students agreed. Finally, one third of the student respondents said they had been subject of a racial incident on campus. African-American students were most likely to assert that they had been discriminated against in the classroom, while white students more typically cited incidents involving other students outside the classroom.

Policy. The analyses and subsequent discussions led to several major policy decisions at the community college. Several successful student support services, such as mentoring and tutoring programs, had been developed and funded using grants. The administration decided to continue funding these programs on the

operating budget as grant monies expired, a significant resource allocation given the tight fiscal situation. The findings concerning developmental coursetaking led to a new policy that mandated completion of remediation prior to attempting more than 12 credits. The low pass rates in developmental courses led to enforcement of a 30-hour laboratory requirement in each course. Students would be required to spend an average of two hours weekly in the developmental learning lab. To further enhance remedial instruction, the college hired two additional full-time faculty and six new laboratory assistants to help students fulfill the new 30-hour lab requirement. The campus climate study findings influenced policy as well. A new three-credit cultural diversity graduation requirement was instituted. All candidates for associate degrees must complete a three-credit course exploring other cultures from an approved list. A graduate-level, full-semester seminar on "Understanding Cultural Pluralism" was designed and offered to college faculty and staff. Finally, following up on a successful eight-month-long lecture and performance series, the college established an annual "Bluebird Blues Festival" celebrating this uniquely American art form. The inaugural festival had brought together campus students and staff from all races in a successful, enjoyable day. The college hopes the good feelings of the first festival will carry forward into an annual event anticipated campuswide.

Continuing Education Recruitment

Enrollment management should not be restricted to degree-credit programs, particularly at institutions with substantial continuing education operations. At Prince George's Community College, in any given year as many students enroll in noncredit courses as attend credit classes. Noncredit, continuing education offerings account for 30 percent of total full-time-equivalent enrollment. And noncredit FTEs are paid at the same rate as credit FTEs in Maryland's community college funding formula. As a result, continuing education has been included in the college's enrollment management from the start.

Data. The PMIs for continuing education at PGCC include tracking course enrollments and state-aid-eligible FTEs bi-weekly for open enrollment courses, contract training (apprenticeship, government employment training, and private sector), and special populations such as senior citizens, talented and gifted youth, and a children's developmental clinic. Registrations and FTEs in open enrollment courses fell in fiscal year 1991. This decline, combined with an announcement by the state that it would no longer subsidize apprenticeship education, prompted continuing education administrators to review the marketing of open enrollment courses. Existing policy was to mail a complete noncredit class schedule to every household in the county three times a year.

Analysis. Continuing education officials asked the institutional research office to utilize its geo-demographic, lifestyle cluster analysis system *PG-TRAK* to examine open enrollment course registrations data to explore the possibility of neighborhood-targeted direct mail promotion. The analysis involved three steps (Boughan, 1991). First, continuing education enrollment penetration (the ratio of number of students per population residing in each cluster) was calculated, identifying clusters providing disproportionately more or fewer noncredit enrollments per population. The results were compared to penetration analyses done previously for credit courses, revealing a broad similarity but also some notable differences. Among the latter were clusters with large concentrations of elderly citizens who were much more likely to have enrolled in noncredit classes than credit classes. Similarly, residents of "Sophisticate Mix," characterized by highly educated, childless professionals, exhibited little interest in PGCC credit classes but did partake of noncredit offerings. In contrast, residents of "Fort George," a cluster dominated by a military base, were active in credit classes but were least likely among all 24 clusters to enroll in noncredit courses. In short, the first analysis identified the areas in the county that provided the most noncredit students, and the areas where noncredit courses were notably more popular than credit courses.

The next analysis attempted to reduce the massive set of noncredit enrollment data into manageable proportions. During the five years under study, the continuing education division offered over 2,000 different courses in 37 different interest areas. These offerings generated over 63,000 individual course registrations. How could the college make sense of this complex data set? The research office decided to employ a statistical technique called factor analysis. Were there patterns in student enrollment behavior such that students grouped themselves into consumers of relatively distinct groupings of courses? If a student enrolled in one type of class (e.g., computer software training) were they also likely to enroll in another (television production)? A yes answer, and identification of such "product themes" among course enrollment behavior, would have obvious marketing implications. The factor analysis revealed seven course themes: *career exploration* (career planning courses plus management, job skills), *entrepreneurship* (small business, financial planning, communications skills), *high technology* (computer software, television production), *trades and crafts* (automotives, carpentry, police work), *home and office* (family and health issues, secretarial skills), *creative impulse* (photography, creative writing, "New Age" hobbies), and *lifestyle* (fashion, gourmet cooking, travel, foreign languages).

The third and final analysis related course enrollment behavior (in terms of product themes) to neighborhood (cluster) of residence. In other words, how did residents of the 24 clusters respond to the seven course themes? Fortunately, the clusters were easily grouped into eight "cluster blocks" due to similarities in coursetaking, so the analysis could be reduced to a matrix relating the eight cluster blocks to the seven product themes (see table on following page).

Cluster Analysis of PGCC's Non-Credit Market

Cluster Block	Course Theme: Explore Career	Entre-preneur	High Tech	Trade/ Crafts	Home/ Office	Creative	Life Style
Country Club	95	127	92	88	81	110	169
Sophisticate Mix	76	98	142	48	44	213	89
White Bread 'Burbs	106	100	95	103	89	101	119
Middle America	115	82	97	132	105	110	84
Rural Blues	154	151	68	87	68	95	50
Emerging Minorities	79	108	108	79	107	77	72
Minority Blues	94	88	128	117	137	64	55
Fort George	74	23	63	77	175	83	56

Policy. As a result of the cluster and factor analyses, the continuing education office decided to conduct a pilot test of a cluster-targeted direct mail campaign. The test case was a vocational center located at a county high school. For three years, the college had offered evening classes in automotives, printing, electronics, locksmithing, and similar trades, using the high school's state-of-the-art vocational education shops, but with disappointing results. Enrollment had remained below expectations, given the quality of the facilities and the center's location in a densely-populated, blue-collar area suffering from above-average unemployment. Officials hypothesized that the low enrollment was due to the community's lack of awareness of the center and its offerings. Based on a cluster analysis of past enrollment at the center, a targeted mailing to 5,000 households was conducted. A brochure describing the center and its offerings was mailed to 4,000 households in clusters that had historically provided a disproportionate share of the center's enrollment. The remaining 1,000 brochures were mailed randomly to serve as a control group. The campaign brought in 22 students above what would have been expected without the separate mailing. This modest improvement reflected poor targeting, as subsequent analysis of the return

from the control group revealed. Selection of different clusters for targeting might have provided more response rate "lift." The lesson learned was that enrollment history may not be the best guide for contact selection. In addition to this pilot direct mail campaign, the analysis led to repackaging of courses (in subsequent continuing education publications) under the product themes identified by the factor analysis. Finally, consideration is being given to suspending the county-wide mailing of the class schedule. Instead, the schedule would be mailed to selected clusters and the money saved used for future targeted promotions.

Conclusion

Institutional planning and rational management require assumptions about enrollment magnitude and characteristics. Whether planning new academic programs, estimating adjunct faculty needs, projecting dormitory utilization, building a budget--almost all planning in higher education requires enrollment forecasts. In turbulent times, when seemingly the only constant is change, making such assumptions can be difficult. As student bodies become more ethnically, culturally, and economically diverse, student needs multiply and institutions may find both recruitment and retention increasingly challenging tasks. Effective enrollment management can introduce some stability and predictability into the planning context, with the promise of increased efficiency and effectiveness in meeting both student and institutional goals.

Successful enrollment management depends on an information base that is comprehensive, targeted, and continuously updated, to inform enrollment management policies and to monitor their effectiveness. Institutions implementing enrollment management programs need to establish an initial information infrastructure, including a longitudinal student tracking system and a set of performance monitoring indicators (PMIs) covering each stage of student involvement with the institution. These internal monitoring mechanisms should be supplemented by a periodic, formal environmental scanning process. The PMIs, environmental scanning insights, and informal feedback from students, faculty, and staff constitute the data for continuous evaluation of the enrollment management program. These data will identify areas in need of further analysis; for example, a PMI may show an undesired trend or failure to meet a target, or the scan may reveal a changed governmental policy or socio-economic shift with implications for the institution's enrollment outlook. Detailed analyses may suggest policy revisions. The impact of the revised policies will be monitored by subsequent PMI compilations, in a continuous improvement cycle. Adopted in its entirety, our approach:

1. Establishes a comprehensive framework for studying student-college interaction from initial inquiry onward.

2. Encourages development of enrollment targets, performance monitoring systems, and longitudinal tracking files.

3. Identifies areas of student behavior where institutional understanding is weak.

4. Integrates institutional research into enrollment management policy formation.

5. Promotes continuous improvement through the data-analysis-policy (D-A-P) cycle.

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